

IN THE CLAIMS:

The following is a complete listing of the claims in this application, reflects all changes currently being made to the claims, and replaces all earlier versions and listings:

Claim 1. (previously presented): A photoelectric converter comprising a plurality of pixels each comprising a sensor element for converting incident light into an electrical signal and a plurality of thin film transistors electrically connected to the sensor element,

wherein each of the plurality of thin film transistors has a top gate type structure in which a semiconductor layer, a gate insulating layer, and a gate electrode layer are laminated successively on a substrate, and an electrode of the sensor element electronically connected to the plurality of thin film transistors is disposed above the thin film transistor, and

wherein the electrode of the sensor element covers each channel region of the plurality of thin film transistors, and each of the plurality of thin film transistors is constituted by a respective further plurality of thin film transistors which are connected in series with one another and which have gate electrodes that are connected electrically.

Claim 2. (cancelled).

Claim 3. (previously presented): A photoelectric converter according to claim 1, wherein the plurality of thin film transistors electrically connected to the sensor element comprise: a transferring thin film transistor for transferring an electrical signal from the sensor element, a resetting thin film transistor for resetting the sensor element, the transferring thin film transistor having the gate electrodes of its further plurality of thin film transistors connected to

the same gate wiring, and the resetting thin film transistor having the gate electrodes of its further plurality of thin film transistors connected to the same gate wiring.

Claim 4. (previously presented): A photoelectric converter according to claim 1, wherein the plurality of thin film transistors electrically connected to the sensor element comprise: an amplifying thin film transistor for receiving an electrical signal from the sensor element; a transferring thin film transistor for outputting the electrical signal; and a resetting thin film transistor for resetting the sensor element, the amplifying thin film transistor having the gate electrodes of its further plurality of thin film transistors connected to the electrode of the sensor element, the transferring thin film transistor having the gate electrodes of its further plurality of thin film transistors connected to the same gate wiring, and the resetting thin film transistor having the gate electrodes of its further plurality of thin film transistors connected to the same gate wiring.

Claim 5. (previously presented): A photoelectric converter according to claim 1, wherein the channel regions of the plurality of thin film transistors electrically connected to the sensor element are wider than the gate electrodes of those thin film transistors.

Claim 6. (previously presented): A radiation image pickup device, comprising:
the photoelectric converter as claimed in claim 1; and
a conversion unit provided on a light incidence side of the photoelectric converter for converting radiation into light.

Claim 7. (previously presented): A radiation image pickup device comprising a plurality of pixels each comprising a sensor element for converting radiation into an electrical signal and a plurality of thin film transistors electronically connected to the sensor element,

wherein each of the plurality of thin film transistors has a top gate type structure in which a semiconductor layer, a gate insulating layer, and a gate electrode layer are laminated successively on a substrate, and an electrode of the sensor element electrically connected to the plurality of thin film transistors is disposed above the thin film transistors, and

wherein the electrode of the sensor element covers each channel region of the plurality of thin film transistors, and each of the plurality of thin film transistors is constituted by respective further plurality of thin film transistors which are connected in series with one another and which have gate electrodes that are connected electrically.

Claim 8. (cancelled).

Claim 9. (original): A radiation image pickup device according to claim 7, wherein a storage capacitor is connected to the sensor element.

Claim 10. (previously presented): A radiation image pickup device according to claim 7, wherein the plurality of thin film transistors electrically connected to the sensor element comprise: a transferring thin film transistors transistor for transferring an electrical signal from the sensor element; and a resetting thin film transistor for resetting the sensor element, the transferring thin film transistor having the gate electrodes of its plurality of thin film transistors connected to the same gate wiring, and the resetting thin film transistor having the gate electrodes of its plurality of thin film transistors connected to the same gate wiring.

Claim 11. (currently amended): A radiation image pickup device according to claim 7, wherein the plurality of thin film transistors electrically connected to the sensor element comprise:

[[a]] an amplifying thin film transistor for receiving as its input an electrical signal from the sensor element;

a transferring thin film transistor for outputting the electrical signal; and

a resetting thin film transistor for resetting the sensor element, the amplifying thin film transistor having the gate electrodes of its plurality of thin film transistors connected to the electrode of the sensor element, the transferring thin film transistor having the gate electrodes of its plurality of thin film transistors connected to the same gate wiring, and the resetting thin film transistor having the gate electrodes of its plurality of thin film transistors connected to the same gate wiring.

Claim 12. (previously presented): A radiation image pickup device according to claim 7, wherein the channel regions of the plurality of thin film transistors electrically connected to the sensor element are wider than the gate electrodes of those thin film transistors.

Claims 13. -19. (cancelled).

Claim 20. (currently amended): A radiation image pickup system comprising:
the radiation image pickup device as claimed in claim [[7]] 6;
processing means for generating an image as an object for image pickup on the basis of electrical signals obtained from the radiation image pickup device; and
display means for displaying the image generated by the processing means.

Claim 21. (previously presented): A radiation image pickup system comprising:

- the radiation image pickup device as claimed in claim 7;
- processing means for generating an image as an object for image pickup on the basis of electrical signals obtained from the radiation image pickup device; and
- display means for displaying the image generated by the processing means.

Claim 22. (previously presented): A photoelectric converter according to claim 1, wherein the electrode of the sensor element covers the semiconductor layer of the plurality of thin film transistors.

Claim 23. (previously presented): A photoelectric converter according to claim 1, wherein two interlayer insulating layers are disposed between the electrode of the sensor element electrically connected to the plurality of thin film transistors and gate electrodes of the plurality of thin film transistors, and a single interlayer insulating layer is disposed between the electrode of the sensor element electrically connected to the plurality of thin film transistors and a wiring electrically connected to the plurality of thin film transistors.